VOLUME XV NUMBER 6

THE ELEMENTARY SCHOOL JOURNAL

CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

FEBRUARY 1915

EDUCATIONAL NEWS AND EDITORIAL COMMENT

The Richmond Conferences

Between the 7th and 12th of December, Richmond, Virginia, entertained the delegates to two national conventions. The first was that of the National Vocational Guidance Association and the second the annual convention of the National Society for the Promotion of Industrial Education. Of the first conference little need be said except to record that it bore evidence of an ever-increasing interest in the movement to make vocational guidance, in all of its different phases, an integral part of the public-school system. The employment of vocational counselors, the gathering and distribution of vocational information, the establishment of placement bureaus, and the exercising of employment supervision were all discussed and approved. There can be no doubt that the movement is gaining in definiteness and consequently in general support.

The eighth annual convention of the National Society for the Promotion of Industrial Education was unique in the meetings of this society. In the first place, it was more nearly "national" than ever before both in the delegates attending and in the speakers on the program, eleven states and the District of Columbia being represented by the latter.

In the second place, the entire program was based upon an extensive survey which had been in progress in Richmond during the eight months preceding the conference.

In the third place, the deliberations brought to the surface nothing but the most harmonious opinions, regarding industrial education, from representatives of corporations, organized labor, and educational authorities, and from legislators and social workers.

And finally, the conference revealed the growing influence of the National Society and also indicated the general lines along which this influence is to be exerted.

The Richmond "Survey" was made, at the request of the city of Richmond, under the direction of the National Society. The Society had the assistance, however, of many important organizations, among them being the United States Bureau of Education, the United States Bureau of Labor Statistics, and the Russell Sage Foundation, besides the following local bodies: the Board of Education, Board of Trustees of the Virginia Mechanics Institute, Business Men's Club, Chamber of Commerce, Rotary Club, Central Trades and Labor Council, Metal Trades Council, and a number of employers' associations.

The total cost of the survey is estimated at from $15,000 to $20,000. Of this the amount of $10,000 was subscribed locally for the expenses of the survey and of the convention, and the remainder was borne by the Russell Sage Foundation, which made the school survey, and the Bureau of Labor Statistics, which bureau gave the services of its expert, Mr. Winslow, and will print the final report.

The amount and nature of the co-operation indicated by these statements are highly suggestive and need no further comment.

The school survey was made under the direction of Dr. Leonard P. Ayres. The work contemplated the examination of such facts only as related specifically to education and to industrial employment. It consisted in the examination, tabulation, and interpretation of statistics already available, and the collection of certain information about the employment of the older brothers and sisters of the thirteen- and fourteen-year-old school children. This information was secured by means of questionnaires, submitted to the children in question, and relating to the kinds and conditions of labor in which these brothers and sisters were engaged and to the progressiveness or non-progressiveness of wages.

The school survey revealed the fact that Richmond, a wealthy city, was doing far less than most cities of her class for education in general, and little or nothing for the children who would profit most by industrial education. It showed that, while a well-enforced child-labor law kept children out of the factories and many other places of employment until sixteen, a very small fraction of these children remained in school after reaching twelve years of age. It showed clearly that the kind of education most urgently needed was of a prevocational nature.

The industrial survey was a more elaborate affair, though it is to be doubted whether it will be more productive of good than the school survey. Its purpose was to make careful analyses of several industries to ascertain all pertinent facts relating to the conditions of labor under which the industrial wage-workers of Richmond were employed. Among other facts sought were age distribution of apprentices, amount and cause of loss of time, extent of part-time employment, age of entry upon wage-earning occupations, relation of years of experience to wages, extent to which workers receive proper training in the shop while learning the trade, misfits in present positions, conditions causing strain or impairing health, and lack of *general school training* of present workers. This part of the survey also attempted the minute analysis of the processes of manufacture in several important industries.

A preliminary report says:

> Eight months' time was given to the survey, which was directed by Mr. Charles H. Winslow and a corps of twenty workers, of whom seventeen were men and three were women. In addition there was an office force of five clerks and stenographers. The field work required six months, during which time at least six people were continuously employed. All the agents were regularly employed, no volunteer help being utilized in this portion of the survey.

It would be well within the facts to say that this industrial survey was made with the full co-operation of organized labor, a most important consideration. Mr. Winslow is a recognized champion of organized labor as well as an expert on industrial education. In one of the most notable addresses of the convention, Mr. Samuel Gompers, president of the American Federation of Labor, said that, for the first time, a sufficient basis in industrial facts had been established to support a practical plan of industrial

training. There can be no doubt that he intended his address to be construed as an authoritative indorsement of the whole Richmond program. This fact alone may be worth to the cause of industrial education all that the survey cost, and it will make it much easier to secure the indorsement of local unions to any plan which follows the Richmond scheme.

This scheme, which, it must be remembered, is supported by all the parties to the survey, includes a much more effective general education, the establishment of prevocational schools, vocational courses in the high schools, and a complete system of day and evening part-time and continuation schools.

In organizing this survey and in bringing together in practical unanimity the employing interests, organized labor, and the school authorities, the National Society has rightfully secured for itself a greatly increased influence, but this increased influence is coincident with a broadening in its own point of view and with the attainment of catholicity in its propaganda. In its pronouncements regarding the introduction of industrial education it has advanced from the position, held five years ago, that such education was a thing apart which needed protection from the narrow-mindedness of the professional educator, and now maintains that all vocational education is a local and not a general question, and, furthermore, is a co-operative matter which should unite all who are genuinely interested in child welfare.

And so the survey must be acknowledged to be a great success. It is not that hitherto unknown or unsuspected facts and conditions have been brought to light by the studies of the several experts. It would have been possible for half a dozen students of the industrial education movement to have foretold all the essential findings after a week's study and conference on the grounds, but the findings now have the moral force of well-nigh unassailable authority and, what is of even greater importance, the testimony of all these experts points inevitably to the logic of the solution recommended by the survey committee and shows that, to be successful, any plan must adequately represent the worker, the employer, and the teacher, and must be adjusted to local conditions of industry and of the present public-school system.

FRANK M. LEAVITT

UNIVERSITY OF CHICAGO

The Meeting of Section L of the American Association for the Advancement of Science

The meeting of the Education Section during the Christmas holidays at Philadelphia showed a remarkable growth in the scientific study of education since the time this section was founded a few years ago. There was a very large attendance at most of the sessions and the papers which were offered were numerous and in the main of high character. In the three days of the meeting there were 48 papers and two general addresses. Besides the separate meetings of this section there were two joint meetings, one with the American Psychological Association and one with the American Federation of Teachers of the Mathematical and Natural Sciences.

Not only the attendance and the number of papers, but also the character of the papers was of great significance. The majority of the discussions consisted in either reports of scientific investigations or critical discussions of experimentation. Two groups of papers were especially prominent. The one was concerned with the development of tests either of mental ability or of efficiency in some phase of school work. The interest in tests as a means of measuring the product of education as reflected in these meetings is very widespread and intense. This was reflected not merely in the account of new tests, or in the application of tests, but also in certain critical discussions. It becomes apparent that the principles which govern the reliability of such scientific means of measurement become of great importance, as these tests are used by a wider group of people. If tests are used without an appreciation of the errors which are possible, there is danger that an exaggerated opinion of the value of the results will be held. It is therefore appropriate that certain of the papers of the meeting had as their aim the effort to determine the exact reliability of the results obtained by tests.

Another large section of the meeting was concerned with the study and education of exceptional children. Investigations in this field are still concerned mainly with the backward child in spite of the fact which is theoretically recognized that the superior child is of greater importance than the deficient child. The deficient child, however, awakens the greater attention because his

failure to adapt himself to the work of the school is the more evident. The superior child finds no difficulty in keeping up with his grade in the school and the fact that he is wasting opportunity because his capacities are not fully made use of does not particularly strike the attention of the teacher or the administrator.

In addition to these general types of papers there were some upon the subject of methods of teaching or concerned with methods of learning in general or in particular subjects of the school.

There would not be space to give even a summary account of the individual papers, but a few may be taken as illustrations of the general classes of papers which have been mentioned. A number of papers dealt with the description of new tests or with the investigation of the reliability of certain tests. Professor Yerkes of Harvard University described a method of the diagnosis of the degree of mental development or of intelligence which he calls the *point scale method*. This is intended as a substitute for the well-known Binet-Simon series of tests. It differs from that series in two main ways. In the first place, an answer to a question is not graded merely as right or wrong, but is given a weight according to the character of the answer. Thus a person may gain one, two, or three points according as his answer is of one kind or another to a particular question. Another point of difference is that the tests are not grouped according to different ages, but a child is put through as many tests as there is any chance of his passing and his total score is found by adding the points which he makes on each individual question. This takes account of the difference in the type of mental life of different children. A child may be able to progress to a high point in one type of tests and be low in his ability in another type. Such difference would not lower his score in the point scale, although it might by the Binet method.

Two other interesting mental tests were described, one of them a picture-arrangement test in which pictures of the type of the "Foxy Grandpa" series are placed out of their order and the child is required to place them in the order which makes a connected story. No words, of course, appear to guide the child in this arrangement. This test was described by Professor Fraser of Cornell. Mr. Trabue of Columbia described the standardization of

a sentence completion test. This consists in a series of sentences from each of which one or more words are omitted and are to be supplied by the child. Fifty-six sentences have been put in order according to their difficulty based upon the response of school children to the test.

Considerable interest was manifested in handwriting scales. A paper by Mr. H. T. Manuel indicated the extent to which we may expect reliable results from the use of the Ayres scale when papers are graded by a single judge and the results are to be compared with those obtained by other judges. The same general principles would hold for the Thorndike scale. It appeared from extensive tests that if two persons measured a group of papers by such a scale there would be one chance out of two that they would differ by as much as a step on the Ayres scale. This amount of difference is equal to more than twice the difference between successive school grades. This paper was followed by one by the present writer in which an analytical method for grading handwriting was described; that is, a method according to which five characteristics were judged one at a time with a chart for guidance in grading each characteristic. Professor Thorndike in commenting upon the discussion said that undoubtedly it would be necessary to develop such analytical scales when one desired to do more than make a rough determination of pupils' standing.

A number of papers described the application of tests, as, for example, in the working-out of norms for college Freshmen or in the development of means of measuring the efficiency of children in reading. One paper by Professor B. T. Baldwin reported the application of the Courtis arithmetic tests to college students. Two papers which appeared in the same meeting were of interest because of the contrasting point of view they represented toward school tests in general. The one by Superintendent Bliss of Montclair, New Jersey, expressed a very optimistic attitude toward scientific measurement of educational products. The other, by Professor E. A. Kirkpatrick of Fitchburg, Massachusetts, Normal School, while approving of the tests in general, called attention to the necessity of taking account of their limitation or at least of observing certain principles in their application. He mentioned,

for example, the danger of overemphasis by the teacher of the phase of school work which is the subject of test, of the danger of losing sight of the individual child in the attempt to bring up a class average, and of the fact that the measurement of results and the determination of average attainment of pupils in the school do not automatically give us standards which should be set up as ideals of attainment. In order that we may determine what the standard should be, it is necessary to know the social demand for the product of the school. With reference to the need of paying regard to the individual pupil he mentioned the well-known psychological principle that after a certain point in the practice curve has been reached further effort will be wasted. Therefore, if the teacher has in view merely the standard and not the individual progress made by the pupils, a pupil may be kept practicing long after the limits of profit have been exceeded. The chief aim as Professor Kirkpatrick sees it in educational tests is to enlighten both the pupil and the teacher as to the progress which is being made, and this is a very strong point. By the old method neither teacher nor pupil knew definitely what he was striving to attain, nor the extent to which he was succeeding. By means of an objective test both teacher and pupil may become aware of the change which takes place from month to month and of the degree to which the standard's aim is being reached.

An interesting paper by Dr. L. P. Ayres raised the question of the cost of educating the backward child. After presenting figures to show the number of children who repeat grades and the consequent duplication of work and therefore waste of money in carrying the same child through a grade more than once, Dr. Ayres made the point that the significance of these facts is not so much in the money cost of such repeating, as in the fact that the condition shows the need of an entire reorganization of the graded system. Dr. Ayres then showed the amount of overlapping in the abilities of pupils of different grades as exhibited by tests in number, writing, spelling, etc., indicating that many children of the lower grades have ability which is superior to many of those in the higher grades. This condition, he said, cannot be met merely by attempting to prevent repeating, but must be met by some sort of flexible organiza-

tion which permits the different children to progress through the school at about the same rate of speed, but allows the better endowed to do a much larger amount and higher grade of work than the more poorly endowed children. He expressed the matter by a figure of speech. "We may assume," he said, "that the elementary curriculum is represented by a field of grain to be mowed. All the children, then, should complete a swath from one end of the field to the other, but some children will take a very wide swath and others a very narrow one." How this might be worked out in detail he did not say.

A number of technical papers dealt with the diagnosis of treatment of deficient children. One particularly interesting paper was given by Dr. M. P. E. Groszmann of the National Association for the Study and Education of Exceptional Children. This paper was of interest because it dealt not with the backward child, but with the various kinds of children who were superior or had superior capacities. These children, as Dr. Groszmann showed, require in many cases special treatment in order that their peculiarities or eccentricities may not produce some abnormality in mental development which will impair their usefulness. The children to whom he had reference are not merely those of rapid development, but those in whom there is some exceptional ability in particular directions which is likely to disturb their mental balance. Such children if given proper treatment will exhibit high ability, but if left to themselves may become cranks or even insane.

This report serves merely to suggest some of the more striking subjects which were discussed in the meetings. Many other papers of much interest were given. The high character of the meeting as a whole must be ascribed in large measure to the industry and intelligence in formulating the program and in getting papers which were displayed by the secretary, Mr. A. S. Courtis. The movement for scientific education is clearly growing rapidly and the time is at hand when such gatherings as this will assume the greatest importance to the educational world.

F. N. FREEMAN

UNIVERSITY OF CHICAGO

There is in England an active nature-study society known as the School Nature-Study Union. This association was founded in 1903; it devotes itself to furthering the interests of nature-study in the schools and to popularizing scientific studies. The official organ of the Union is *School Nature-Study*, the editor of which is Miss C. von Wyss, of the London Day Training School, and the headquarters of the Union are at 1 Grosvenor Park, Camberwell, S.E., London. *School Nature-Study* is published five times a year and its price is 6*d*. per number.

The School Nature-Study Union is publishing also a series of leaflets that are designed primarily for the use of the teacher. These cost only 1*d*. each if ordered in lots of twelve, otherwise 2½*d*. Here are a few of the titles:

No. 1. The Green Grocer's Shop and the Use That We Can Make of It.
No. 8. Tree Buds in Winter.
No. 9. The Nature-Study of Rocks.
No. 11. The School Aquarium.
No. 17. Some Common Moulds and How to Grow Them.
No. 18. School Pets, Their Wants and Ways.
No. 27. The True Inwardness of Nature-Study.
No. 30. The Esthetics of Nature-Study.

Many English publishing houses are turning out nature-study books now. Ernest Stenhouse's *First Book of Nature-Study*, by Macmillan; *The Aims and Methods of Nature-Study*, by John Rennie, University Tutorial Press; Scott's *Nature-Study and the Child*, by George B. Harrap & Co., are good samples.

Like our American publishers, the English houses are also putting out a good many books designed especially to help the nature-study teacher or the teacher of elementary science who does not want to attack the scientific books. Unwin's *Pond Problems*, published by University Press, Cambridge, is such a volume. The author endeavors to show how nature-study may use the pond materials and throw the work into problem form.

The author believes that it is only when the work is thrown into such problem form that it comes to have large value in education. As examples of the popularization of scientific work there may be mentioned several books in one particular field of nature-study, that dealing with the birds. H. B. McPherson's *Home Life of a Golden Eagle* is an exceedingly interesting study of the development of the golden eagle from the egg to the young bird ready to fly from the nest. The book is not voluminous—only 45 pages of printed matter—but this is accompanied by 32 plates—photographs of the animal's home life. A similar book by the same publishers is devoted to the home life of the osprey; C. G. Abbott is the author. F. W. Headley writes a book on the flight of birds which is the best presentation of the subject that has appeared, at least in anything like popular form. There are a number of plates illustrating the book that are quite wonderful. Then Bentley Beetham writes a very practical book on *Photography for Bird-Lovers*, in which he describes in detail the methods which he uses successfully in getting pictures of birds during all stages of their life-history. These four books, all from the press of Witherby & Co., are samples of what the English publishers are doing in the interest of nature-study.

It is very satisfactory to find that American schools are not alone in their efforts to use commonplace materials for educative subject-matter, and that the nature-study movement—progressing so satisfactorily in America—has its counterpart in equally successful movements in other countries as well.

Among the pamphlets referred to above the one on *The True Inwardness of Nature-Study* is by J. Arthur Thompson, one of the really great English biologists and a writer of eminence. It is impossible to give a summary of his discussion in so limited a space, for the pamphlet itself is an abstract, but an excerpt will make his meaning clear on one point at least.

> In our ways of prosecuting nature-study there is room for more of another quality which I cannot name—a certain humaneness and freedom. I stand by the heresy that a good deal of the nature-study and of the science generally of the school-days should be frankly recreative. Much of it is at present quite absurdly analytic; much of it is spoiled by an attempt to develop a premature grasp of principles, which is also psychologically wrong.

Now my point is that there should be more educational play and that nature-study is a good subject for this. The Germans have a fine word, *Abänderungsspielraum*—free play for variations—and we need this for the mind as well as for the body. And just as we must not inspect, criticize, peer into children's ordinary play too much, so we must not codify, rationalize, "examinify" nature-study too much. We must leave some room for unconventional exploration and intellectual adventure.

But let there be no misunderstanding. The last thing we wish to suggest is that we can countenance playing at nature-study, in the opprobrious sense of the word "playing." At times we must be as serve as the mathematician, as precise as the chemist. It is no easy thing to see clearly, to record accurately, to think scientifically—and unless we sincerely work toward these ends our nature-study is become as a tinkling brass or a sounding cymbal. My point, however, is that we are thinking this afternoon of the education of the citizen, and my recommendation is that we remember the need for a culture of feeling. Without losing hold on modern methods, may we not work back a little toward something simpler and less analytic—the old-fashioned but very real lore of the shepherd and the farmer, of the minister and the dominie in the country parish?

Another survey[1] which is notable because of the character of the surveyors and also because of the importance of the city in which the survey was made is that which was completed early in the summer of 1914 at Butte, Montana. This survey differs from the others which have been published in that it attacks the problem by first making a careful statistical analysis of the school population.

The first chapter, by Mr. Bachman, deals with the classification and progress of pupils. Contrasted with the Portland Survey, for example, the present report, instead of dealing with the general economic conditions of the population of the city, opens with a detailed account of the distribution of children in the schools. One is impressed by the fact that a report of the present type is less likely in its earlier chapters to command the interest of the people of the city. On the other hand, the material with which this report opens is perhaps better mastered by scientific students of education than any other single type of material that could be employed.

[1] *Report of a Survey of the School System of Butte, Montana.* Published by the Board of School Trustees of Butte. Pp. 197.

The second chapter, which is by Professor Strayer, the director of the survey, deals with the quality of instruction. In this chapter Professor Strayer has given with a good deal of detail the principles on which instruction should, in his judgment, be organized. The chapter impresses one as being somewhat theoretical, and the general question arises whether the surveys of various cities should be made the avenues for communicating to school people and to the local citizens broad, general principles of education. On the other hand, it may be answered that without the establishment of these general principles there is no possibility of judging the effectiveness of the work that is carried on in schools.

The third chapter, on the course of study, which was prepared by Professor Cubberley, deals in more detail with the various subjects of instruction. The tests, which were carried on by Mr. F. J. Kelly and are reported in the fourth chapter, seem to justify the contention of all of the contributors to the survey that the children in the schools are efficient in the formal phases of school work. They seem to be very rapid in addition and efficient in grammar and other formal subjects, but they are described as lacking in power of reasoning and in interest in broad, general considerations. This criticism of the children of Butte could probably be repeated for the children of most of the schools in the United States. How far one has a right to demand of children that they show ability to reason is a question that will remain open until investigation of many cities and schools can establish something like a standard for these more desirable and higher products of education.

It will be interesting to find out how far the present survey has proved to be a convincing document for the community to which it was addressed. The volume will serve as a handbook for students of education, and the many suggestions which it contains doubtless could be accepted with advantage by the school system of Butte. There is, however, much material in this report which is of doubtful propriety in a survey of a city. The scientific student of education will have to be on his guard lest he overload the reports which he has an opportunity to make with so much abstract material that the world at large will get the impression that he is making

theoretical studies of education rather than practical surveys of particular situations.

The American Peace League has interested itself in a broad way in the problem of training children not only in the details of the campaign against war but in the general problems of community life. The members of this league have prepared a book[1] in which they have attempted to bring together the material which can be used in schools in giving a broad training in citizenship.

The early chapters of this book deal with such virtues as kindness to playmates and animals. The point of view is that of the home rather than the civic community. The second chapter takes a somewhat more comprehensive view of the school and the playground and deals with such matters as the childhood of great men, and the general virtues of obedience and helpfulness. In chap. iii, intended for the third grade, one begins to be acquainted with the neighborhood and to understand what is meant by neighbors and the possibilities of service to the whole community. In the fourth grade the town and city are introduced. Finally, the nation, general American ideals, the United States, and the world-family are presented for the different grades.

The book contains an abundance of references, so that material can be secured beyond the compass of the volume itself. The material is suitable for morning exercises or for class exercises, and many good stories are included in the text itself.

Superintendent Taylor has undertaken once more a general survey[2] of the activities in this country and abroad which are aimed at the development of vocational courses for children in the schools and in continuation classes.

Mr. Taylor remarks in his preface that there is no systematic treatise dealing with this problem. He attempts to supply what he regards as a deficiency in educational literature. He surveys

[1] *A Course in Citizenship.* By Ella Lyman Cabot, Fannie Fern Andrews, Fanny E. Coe, Mabel Hill, Mary McSkimmon. Houghton Mifflin Co., 1914. Pp. 386.

[2] *A Handbook of Vocational Education.* By Joseph S. Taylor. Macmillan Co., 1914.

the various types of industrial education in Germany, especially in Munich, and in Edinburgh, Scotland, and in some of the leading centers in the United States. It is, of course, a mistake to assume that these various school systems have not been adequately described. Indeed, in many reports all of the material which Mr. Taylor presents is available. The virtue of the present book is that it puts the matter in very simple and concise form within the compass of 179 coarsely printed pages. Mr. Taylor has touched upon most of the leading experiments along vocational lines.

Following the text are some forty pages including as appendixes documents of permanent value to the student of vocational education. Perhaps one of the most valuable contributions is the paper quoted from Professor Dewey, on p. 191 and subsequent pages, in which Professor Dewey, under the title, "An Undemocractic Proposal," opposes the bill which has been suggested by Mr. Cooley for the state of Illinois, according to which a separate school system is to be set up to give vocational training to the children of the state.

The problem of making scientific studies of school work available for practical teachers is one on which professors of education are at the present time busily engaged. During the last fifteen years a good deal of material has been accumulated in laboratories and in advanced courses on the different school processes. Some years ago Professor Huey attacked the most vital problem of the elementary school, namely, reading, and published a volume on the psychology and pedagogy of reading. That volume was criticized because it did not present the material in a sufficiently practical form. Professor Freeman has tried his hand at the presentation of scientific material on handwriting in a new volume[1] of the "Riverside Educational Monographs." The success with which he has accomplished the work must, of course, be judged by those who attempt to use his advice in organizing school work. The volume contains at all events a very large amount of practical

[1] *The Teaching of Handwriting.* By Frank N. Freeman. Houghton Mifflin Co., Pp. 156.

advice to teachers. The summary of scientific material is condensed and simplified so that no one can fail to see the importance and the character of the experiments which Professor Freeman reports.

The practical character of the book can perhaps be judged best by repeating Professor Freeman's statement of the way in which the movements involved in handwriting should be made.

> The form of movement, then, which best meets the requirements which may be laid down as the result of experiment and of practical experience is somewhat as follows: The hand and arm must be so adjusted that the hand progresses freely along the line during the formation of the letters and in the spaces between words. The hand must rest upon some freely sliding point or points of contact, such as the finger nails or the side of the little finger. When, on the contrary, the pen point is carried along from one letter to another by means of adjustments of the parts of the fingers and the hand, the hand continually gets into a cramped position.
>
> The movements of the arm and fingers should form a smooth and easy co-ordination in which there is a condition of flexibility in the whole member. The rotation of the arm upon the muscle pad of the forearm as a center carries the hand along, the upward and downward oscillatory movement forms the groundwork of the letter formation, and slight adjustments of the fingers complete the details of the letters. In addition to these chief elements of the movement the wrist may rotate to the side to supplement the sideward movement of the arm, and the forearm may revolve upon its axis in the movement of pronation as a corrective to the increase in slant at the end of the line. There is no good reason for seeking to eliminate any of these component movements. Each has some part to play. Moreover, room must be left for individual differences in their relative prominence and manner of combinations.

The last chapter of the book reviews the various efforts which have been made to furnish standards for the judgment of specimens of handwriting. Furthermore, Professor Freeman has worked out an elaborate series of charts which make it possible to analyze any specimen of handwriting into its elements. Thus the slant and spacing, the character of the alignment, and the form of the letters can all be distinguished from each other as distinct virtues or defects of handwriting. Instead of using a single scale to cover all of these different qualities, Professor Freeman suggests that teachers cultivate skill in the analysis of handwriting and the selection of particular defects to be corrected by special lines of attack upon each of the special aspects of the writing movement.

The first line of vocational education which was seriously attacked in the United States was the training of clerks and office assistants. The kind of training that was thus developed has commonly gone under the name of commercial education. It has for the most part been cultivated by private institutions. Only recently have the public schools taken over this work in any large measure. The elementary school has, in general, not included very much of this sort of work. A little bookkeeping has sometimes been introduced and the arithmetic of the upper grades has sometimes been described as commercial arithmetic and has been given a special character to meet the demands of those who are going into business.

With the development of the intermediate school and with the specialization that is now going on in the upper grades of the elementary school the problem of introducing commercial work into the upper grades is likely to be more and more vigorously discussed. Elementary teachers may, therefore, with profit look into some of the volumes which are now being prepared for those who are interested in commercial education chiefly from the point of view of high-school teachers.

In an earlier issue of the *Journal* Professor Farrington's volume on commercial education in Germany was reviewed. It is proper, therefore, to mention briefly a work[1] which has just appeared on the methods of commercial education in American schools, especially in the American high schools. This volume discusses with a good deal of detail the general principles of method as applied to business courses, and in Part II takes up business arithmetic, office practice and routine, bookkeeping, accounting, commercial geography, technique of commercial history, commercial law, economics, business English, stenography, and typewriting. Part III deals with the preparation of teachers for such work.

The careful reader misses in some of these discussions of method the maturity of judgment which has long been familiar in the discussion of methods in the conventional school subjects, such as

[1] *Principles and Methods in Commercial Education.* By Joseph Kahn and Joseph J. Klein. Macmillan Co., 1914. Pp. 493.

reading, arithmetic, and so on. At the same time, there can be no doubt that the methodology of commercial courses differs from the methodology of the other subjects, and it is well that this difference should be made a subject of explicit attention.

The time has passed when teachers are willing to devote any large amount of attention to the study of the history of education if that history is merely to be a résumé of books on theory. A history of education which repeats what Locke and Rousseau and other writers have said is relatively easy to prepare, because the author of such a book needs only to sit down with the volumes that he is reviewing and give an epitome of what each author has said.

Many students who have taken required courses in the history of education at normal schools and colleges have questioned the whole system of education of teachers because they have not been able to see the usefulness of any such historical studies. Gradually, however, the situation is being changed. Industrious students of history are finding material which is of genuine value to all teachers. It is important that we should know something about the development of the course of study as it has actually taken place in American schools. It is important that we know something about the mistakes and successes that have appeared in the administration of state school funds.

The collection of this kind of information entails, however, a great deal of research, and the ordinary student of the history of education finds himself handicapped because of the lack of material and because of the arduousness of the historical problem which is presented. There are so many local differences in different parts of the United States that any complete history of schools of the United States will involve the co-operation of many workers in different centers. It is very encouraging, therefore, to find that a new agency has arisen which is to co-operate in the collection of this type of historical material.

The state of Iowa has always been interested in its school system as one of the clearest expressions of the pioneer spirit which

has dominated that state from the beginning. The Historical Association of that state has now put out two handsome volumes[1] dealing in detail with the history of schools in the state of Iowa. All of the agencies in the state that could contribute to the collection of material have been drawn upon, and we are promised subsequent volumes which will take up in detail other aspects of the school system.

It is not appropriate here to enter into any detailed account of these two volumes now at hand. Suffice it to say that they furnish an example which teachers in all parts of the country should set before their local historical associations with as much emphasis as possible. If agencies could arise in all of the different states for the collection and publication of an elaborate body of material of the type that is now at hand from Iowa, it would soon be possible to give a description of American education that would be of real use to teachers in training and of very great interest to those who are conducting present-day schools.

A very wide interest has been exhibited in the methods of individual instruction practiced in the schools of Batavia, New York. From time to time the so-called Batavia method has been discussed in this *Journal*. We now have a book from Superintendent Kennedy who inaugurated the system.[2]

This books consists of a series of chapters discussing various aspects of the system and giving an account of the reason for its continuance. The book is a description and something of an argument in favor of this sort of organization. Undoubtedly the argument would have been very much stronger if it had been supported by systematic objective evidences regarding the success of this system in the advancement of individual children. One misses in the book the type of material which has come to be familiar in recent school surveys where the efficiency of a system is tested out and recorded in objective terms. The time will doubtless

[1] *History of Education in Iowa*. By Clarence R. Aurner. State Historical Society of Iowa, 1914. Vol. I, pp. 436. Vol. II, pp. 469.

[2] *The Batavia System of Individual Instruction*. By John Kennedy. Batavia, N.Y.: C. W. Bardeen, 1914.

come when those who institute school reforms will find it necessary in persuading their colleagues to adopt their examples to give such objective evidence of their success.

The problem of keeping family accounts is not merely a problem in subtraction and division; it is in very large measure a problem of practical economics and a problem of mastering some of the devices that modern ingenuity has put at the disposal of the household. To rescue family accounts from the arithmetics and make a separate readable book on the subject was therefore a stroke of practical and pedagogical genius. Mr. Brookman's new book[1] has sections on house-furnishing, on reading the gas meter, on taxes, taking boarders, insurance, and other equally absorbing topics. Each topic is introduced by an explanatory text telling what is actually involved. There is a little mathematical work in each section.

[1] *Family Expense Account.* By Thirmuthis A. Brookman. Boston: D. C. Heath & Co., 1914. Pp. 98.

CLASSROOM METHODS AND DEVICES

Physiology and Hygiene for Prevocational Boys

In the introductory article of this series it was pointed out that the purpose of prevocational work was dual: first, to incite intellectual activity by means of a new and more vital interest in one or more of the regular school subjects, and second, to increase the pupil's potential occupational efficiency as an insurance against incompetency should he be forced into work at the earliest possible moment.

If properly conducted no subjects have greater possibilities in both respects than physiology and hygiene. Children of prevocational age may easily be interested in a study of the body and of the laws, both physical and social, which govern its development and secure the conservation of its powers.

At first thought it may seem unnecessary to present arguments in favor of introducing the study of physiology into the course of study when instruction in this subject is required by law in so many states. It should be appreciated, however, that physiology is seldom taught to the pupils with whom these articles are dealing, such instruction being reserved for the grades which they rarely reach, or, if given in the lower grades, being of such a nature as to make little appeal to the children of this type and to have practically no effect on their mode of living. Furthermore, where the subject is taught to industrial classes it is still in its experimental stage, which fact warrants a statement of our principles as well as of our practices. We would give briefly, therefore, the reasons why this instruction is peculiarly pertinent for prevocational pupils.

The study of physiology is, by its very nature, of genuine interest to pupils of this age, and this interest may be utilized in leading the children, not only to take better care of their bodies, but to appreciate the real value of other sciences which are more or less closely related.

The study of hygiene is perhaps even more effective as a means of developing occupational efficiency. Much thought, time, and money have been expended in developing courses of study which will contribute to the pupil's ability to take his place in the ranks of the world's workers. There are no means of evaluating this training in terms of increased efficiency, though careful observers have little doubt that such training actually enables the pupil to find his place in industry more quickly after leaving school and to fill it more acceptably. There must always be a question, however, as to just how great the advantage of this training may be over that afforded by the traditional school courses. But even a superficial examination of the facts will convince one that any improvement in the physical condition of the industrial worker will certainly increase his efficiency. Improper diet, unhygienic housing and working conditions, and any infringement of the laws of physical life result in a sapping of energy and a loss of time from sickness which often prove a serious handicap in the competitive struggle with those more liberally endowed by nature with strong bodies and by circumstances with more invigorating surroundings either at home or in the work-place.

While the efficiency and the period of usefulness of the workingman depends more largely upon his health than upon any other one thing, he rarely has any adequate knowledge of the effect which his mode of life and his surroundings have upon his physical health and strength. It would seem natural that the people's schools, especially those which exist primarily to secure greater efficiency in the future industrial worker, should devote a great deal of attention to a subject of such vital importance. An examination of the courses of study in the various industrial schools will convince one, however, that little consideration is usually given this subject. It will be seen, therefore, that any study or training which tends to improve the pupil's health or to make him more intelligent regarding the laws which society has enacted for the benefit of child or adult workers will possess real vocational value. As it will quite as certainly contribute to the pupil's culture, the study of physiology and hygiene is eminently suitable for all prevocational classes.

Authorities differ as to the best method of teaching the subject and especially as to whether a study of physiology should precede instruction in hygiene. Tolman, in his excellent book *Hygiene for the Worker*,[1] begins his preface with this sentence: "The teaching of hygiene fails when it is founded upon the assumption that a knowledge of anatomy is necessary."

Ritchie, in the preface to his *Human Physiology*, says: "Neither can the desired end be reached by teaching the rules of health without an anatomical and physiological basis; for without such a basis, hygiene is an intangible and an elusive subject."

There are many reasons why the course in hygiene should be preceded, wherever possible, by an elementary and eminently practical study of anatomy and the functions of the various organs of the body. Some of these reasons may be stated as follows:

1. Unless it is based on some knowledge of physiology, hygiene must be taught through mere memorizing and not through processes of reasoning.

2. To arouse the young worker's interest in hygiene without giving him some scientific knowledge of the different organs of his body may lead him to fall a prey to the first quack doctor with whom he comes in contact. If the technical and scientific terms are avoided altogether, the pupil is likely to be awed or unduly impressed by the first person whom he hears glibly using them on the street corners.

3. For children of the age with which we are dealing in these articles there is reason to believe that physiology will be more *interesting* than hygiene and therefore should precede and vitalize it. Dr. Peter Sandiford, in *The Mental and Physical Life of School Children*, says: "Curiosity about the mechanism of the human body does not awaken before adolescence, hence it is worse than useless to try to teach physiology to ten-year-old children. But physiology to fifteen-year-olds is one of the most fascinating subjects in the curriculum."

4. There are many devices for teaching physiology which make a strong appeal to motor-minded children. For example, the mechanics of the respiratory system may be shown by means of a

[1] William H. Tolman, *Hygiene for the Worker*. American Book Co.

glass tube, the air pump, and a small rubber bag.[1] *The Human Mechanism*, by Hough and Sedgwick, will be found helpful in dealing with the various systems of the body from a mechanical standpoint.

A study of such physiology as time will permit, together with the personal hygiene which quite naturally grows out of the discussions, leads logically to some consideration of "industrial hygiene" which ought to be of interest to all future industrial workers. It can be made especially valuable to them through the assistance which it may give in choosing an occupation, or, perhaps, in refraining from doing so. Such a study should seek to inform the children about their own physical powers, or lack of such, and it should also show that the peculiar advantages or dangers of a given position ought to be considered as carefully as circumstances will permit before any occupation is entered. Gradually the schools are coming to assume some responsibility in this matter. Miss Florence M. Marshall, principal of the Manhattan Trade School for Girls, says: "It would be little short of criminal neglect to permit a girl to train for a standing trade who has a flat foot." Letting this serve as a simple illustration of the two factors involved—the physical condition of the worker and the physical demands of the occupation—it is clear that a variety of data can be secured which the teacher may classify and present as best suits the educational and economic conditions of his own pupils. Further illustrations are given in one of the class talks outlined later in this article.

It is to be regretted that industrial hygiene today deals more with disease than with health. Since its line of attack is to abolish unhygienic conditions, it must necessarily call especial attention to the dangers and diseases which inhere in so many occupations. It may appear, therefore, that the details presented herewith serve as warnings to avoid certain positions rather than as guides to suitable occupations. It is sometimes affirmed that, since children *must* enter more or less dangerous and debilitating occupations, there is little value in taking this merely negative attitude and in warning them against doing so—that the more important thing is

[1] Hough and Sedgwick, *The Human Mechanism* (Ginn & Co.), "Mechanics of Breathing Movements," p. 169; "Mechanics of the Heart Beats," p. 138; "Apparatus to Illustrate Circulation," p. 152.

to instruct young people how to minimize the dangers and the harmful effects of their occupations. It must be remembered, however, that society is regulating more carefully year by year or even prohibiting the entry of children into dangerous trades, and is also seeking to reduce the dangers. The surest way to induce industry to ameliorate these unfortunate conditions is to put an embargo on the supply of necessary labor or, by other means, to render the practices expensive. The truth of this statement is amply sustained by the attitude of employers toward the "safety first" movement after the passage of a workingman's compensation law.

There is no economic necessity for this species of human sacrifice and the schools should ally themselves uncompromisingly with all other child-saving agencies in its curtailment or its entire abolition. Of course, for some time to come children will enter such occupations, and so the teacher should present also the positive side of the question and show the potential workers how to protect themselves in every possible way.

While, as above stated, a general interest in the subject may be assumed, it is desirable to vitalize or popularize this interest by some initial lessons intended to show the children the economic or money value of the proper care of the body. The following are suggested as sources of material for such lessons:

Bulletins of the National Safety Council, Continental and Commercial Bank Building, Chicago. There are hundreds of employers who are members of this council. They receive weekly bulletins relating to the prevention of industrial accidents and diseases as well as those common to all walks of life. The bulletins are posted in the factories or other places of employment for the information and guidance of the workmen. Membership may be secured by the payment of an annual fee of $5.00. A copy of one of these bulletins is shown on p. 306.

The Metropolitan Life Insurance Company, New York, distributes, free of cost, pamphlets on "The Health of the Worker," "First Aid in the Home," "Milk," "Teeth, Tonsils, and Adenoids." This fact clearly indicates the money value of preserving the health, and the pupils will find in the pamphlets much excellent advice.

The Sanitol Educational Company, St. Louis, Missouri, publishes a set of drawings by H. Reichard which show the growth of the teeth and indicate how necessary it is to care for them.

With judicious use, an advertisement published by Colgate & Company, Jersey City, New Jersey, entitled "Dental Hygiene," will be found valuable.

(Distributed by NATIONAL SAFETY COUNCIL, Chicago, Ill.)

To All Our Employes:

CONCERNING PNEUMONIA

The Pneumonia season has arrived.

Not because the weather is colder—Arctic explorers do not get Pneumonia until they return to 'Civilization.'

Not because of raw winds, though these chill the body and thereby reduce resistance to the disease.

Pneumonia comes at this season because people close doors and windows to keep out cold air, and thereby condemn themselves to breathe foul air in which the Pneumonia germ rejoices and multiplies.

Keep your houses as warm as you like. People in this country are accustomed to warm rooms, and it would be foolish to make a sudden change.

But see that the place where you live and work has as much fresh air as possible.

A closed window shuts sickness IN, not OUT.

As mentioned above, the presentation of such material as this impresses the pupils with the fact that it "pays" to keep well.

Another method of giving a practical introduction to the subject of physiology is to discuss industrial fatigue. In this connection the teacher would do well to consult Miss Goldmark's authoritative work, *Fatigue and Efficiency*.[1] Answers to questions like the following may be brought out in the course of informal discussions supplemented by assigned readings from a few reference books, in which case particular pages and paragraphs should be selected to simplify the work:

QUESTIONS

1. What is fatigue? (Goldmark, p. 22; Hough and Sedgwick, p. 55.)
2. Of what importance is its study to the industrial worker?

[1] Josephine Goldmark, *Fatigue and Efficiency*. Published by Charities Publication Committee, 105 East 22d Street, New York.

3. To what is muscular contraction due?
4. Can it be shown that this contraction of the muscles is a form of combustion?
5. What is necessary for combustion?
6. How is oxygen brought to muscles?
7. How is this oxygen carried in the blood?
8. What part in this process is played by the food we eat?
9. What are the elements in the carbohydrates?
10. What are the results of the union of oxygen and glycogen? (Goldmark, p. 22.)
11. What is energy?
12. What becomes of the heat?
13. What becomes of the carbon dioxide and other wastes?
14. What is meant by the fatigue poison? (Hough and Sedgwick, p. 60.)
15. What is the remedy for fatigue? (Goldmark, p. 25.)

Although there are no text or reference books just suited to the needs of the prevocational work in this subject, the following are recommended for use in the above and in similar lessons: *Good Health*, *Emergencies*, *The Body at Work*, *Town and City*, *Control of Body and Mind*, by Luther Halsey Gulick, and published by Ginn & Co.; *Primer of Hygiene*, *Primer of Sanitation*, *Human Physiology*, and *Primer of Physiology*, by John W. Ritchie, published by the World Book Co.

The practical phases of the question of fatigue may be made very real to the pupils by telling them of the studies of accidents in factories and their relation to fatigue. The results of one such study are given herewith.

It might be claimed with justice that eternal vigilance is the price of safety in some industries. It is necessary that the operative come to his work with mind alert and muscles under good control. That he fails to present himself in this condition accounts for many industrial accidents, as the following will show:

Statistics covering accidents in the factories of Illinois for a period of one year show that between the hours of eight and nine o'clock in the morning there were 120 accidents, and that this number steadily and progressively increased until, during the hour between eleven o'clock and noon, 257 accidents were recorded. In the hour following the noon rest, or between one and two o'clock, there were 111, the number again increasing hour by hour until,

between four and five o'clock, the maximum of 260 accidents was reached. The most reasonable conclusion is that fatigue is responsible for the increase in the number of accidents in the late hours over the number in the early hours and raises the question why the first morning hour should not show a much lower record than it does. The difference between the early morning hour and the early afternoon hour is comparatively slight, but it is highly significant in that it points to possible personal negligence on the part of the operatives between five o'clock in the afternoon and the beginning of work the next morning. It brings to the front the subject of social conditions in general, opens the questions of personal hygiene in its relation to sleeping-quarters, habits of eating, drinking, smoking, and to the nature of such recreation as may have been taken.

In this connection it is perfectly feasible to teach the pupils something about the workingmen's compensation laws. While this may not be "hygiene," it grows directly out of "industrial hygiene," as it is a part of that movement which society is making to conserve the human element entering as such an important factor into the industrial problem. The whole "safety-first" movement is the result of this interest in conserving human life; and valuable material can generally be obtained from large manufacturing establishments where the movement has been placed in charge of one individual charged with the responsibility of reducing accidents.

This may seem a rather difficult subject for the children of prevocational age but, in reality, is it more so than much of the technical grammar and abstract mathematics which we have required children of this age to study? Does it not come nearer to life, as they know it, than much of the history and geography? And is it not the only possible foundation for such practical sociology and citizenship as the young industrial worker can possibly grasp? Concrete material for the discussion of this question can be had from many sources, but the bulletins of the American Association for Labor Legislation will be found sufficiently suggestive for the interested teacher.

In addition to the informaton which the pupils gain from text and reference books, from what may be called commercial material, and from personal observation, it will be necessary for the teacher to give class talks himself or to secure, from time to time, the voluntary assistance of men and women from the field. As an example of the kind of discussions which will be found interesting and valuable the two following are submitted.[1] They are adapted from Tolman's *Hygiene for the Worker*.

What Kind of Position Should I Seek?

Before taking any position the young worker should first submit to a thorough medical examination, such as is given in many schools today. This would furnish data regarding eyes, ears, chest, nose, throat, lungs, kidneys, back, hips, legs, and feet. If the individual is flat- or narrow-chested or afflicted with catarrhal or bronchial troubles, he should not work at file-cutting, painting, glass and metal grinding and polishing, stone-cutting, paper-hanging, gilding, some kinds of woodworking, grinding and cutting of mother-of-pearl and bone, nor in earthenware and china factories, because of the harmful dusts resulting from the processes employed in these industries. Neither should one seek employment as cigar-maker, tailor, shoemaker, engraver, or jeweler, because of the stooping position which must be taken in such work, thus cramping the lungs. Such persons should seek out-of-doors employment as far as possible.

Persons whose hearts are weak should not engage in occupations involving great strain upon this organ. They should not take work where there is much lifting or carrying of heavy loads, or where there is a constant strain on certain sets of muscles. Such persons are not physically fitted to become bakers, brewers, butchers, coopers, metal-grinders, millers, carpenters, weavers, stone masons, or machine-operators. They should engage in some light muscular work, but never neglect daily exercise.

Those having weak or inflamed eyes should avoid dusty trades, or those in which one comes in contact with heat, steam, vapors, and fumes. Persons who have vision in only one eye should not select an occupation where they are obliged to make accurate measurements on fine work requiring great care. Watchmakers, engravers, tailors, dressmakers, chemists, and draftsmen all require good eyesight, as the strain on their eyes is greater than in most other trades.

[1] Additional material of this nature may be found in such references as the following: Sir Thomas Oliver, *Dangerous Trades* (London: Murray); William H. Tolman, *Safety* (Harper & Brothers); George H. Ireland, *The Preventable Causes of Disease, Injury and Death in American Manufactories and Work-Houses* (American Public Health Association).

Persons who have broken-down arches or who suffer from varicose veins should not select occupations where they are obliged to stand for hours at a time. They should not become motormen, conductors, or bakers, nor seek work in stores or laundries.

Bricklayers, tanners, and butchers are subject to skin diseases through the handling of cement, hides, and much hot water. Persons afflicted with any inflammation of the skin should not engage in these occupations. Those who are liable to suffer from eczema should be careful not to come in contact with acids, dyestuffs, and other materials which might increase the trouble and make it necessary to give up the work entirely. Such persons are not fitted to become bakers, bricklayers, painters, lacquerers, polishers, cooks, or laundry-workers, or to do any work where the hands are kept long in water.

Persons whose hands perspire freely cannot do good work as engravers, watchmakers, fine-instrument makers, or as workers in any of the fine metals. They are particularly unfitted for the handling of delicate materials, such as laces and linens, and for such fine, clean handwork as millinery, embroidery, sewing, bookbinding, and fine leatherwork.

Industrial Poisoning

Industrial hygiene treats also of the various industrial "poisons" and of how to protect the worker from their harmful effects. One illustration only will be given here, namely, lead poisoning.

Of all the metals employed in the arts and industries, none is so widely and generally applicable as lead. Potters, cutlers, file-cutters, glaziers, lead-workers, painters, operators in electric works, typographers, plumbers, glass-workers, earthenware- and tile-makers, lead-foil-makers, shoe-finishers, employees in mirror and silvering works, some chemical workers, and those who wash lead-workers' clothing are all subject to lead poisoning.

Lead is a subtle poison. Most of its salts have no unpleasant taste or odor, are easily soluble, and produce their baneful effects so gradually and insidiously that the worker often becomes seriously ill without any preliminary warning. The symptoms need not be discussed here, but the way or ways in which the poison enters the human system and the means which may be taken to safeguard the worker will be noted briefly.

The metal gains an entrance to the body through the respiratory organs, the digestive canal, or, occasionally, the skin. Inhaled as dust, it is drawn into the respiratory passages, where it is dissolved and passed into the blood, or it may be suspended in the saliva and swallowed. On reaching the stomach it is acted upon by the hydrochloric acid of the gastric juice, converted into a soluble salt, and absorbed.

To prevent lead poisoning the worker should keep himself in as good general condition as possible, exercise care in the selection of food, avoiding acid fruits and using plenty of milk, come to his work with his stomach well filled, and especially practice rigid cleanliness on leaving the works and before eating. A

few months ago the Pullman Company, by the simple expedient of compelling the employees to bathe their hands and faces in hot water for ten minutes, both before luncheon and before going home, reduced its cases of incipient lead poisoning among its painters from seventy-five to none. One white-lead manufacturer advocates giving a free breakfast to the operatives before the beginning of the day's work, while a certain British tile works furnishes hot milk free every morning. Cleanliness with regard to the clothing is also important. In Great Britain the employer of glaze-workers, for example, is required to furnish each of his men with a full suit of washable clothes and to wash and mend them at his own expense every week.

Conclusions

The most important and the ultimate purpose of all this work is, of course, to make good citizens. The employee often fails to see that he is a part of the great public which passes the labor laws and determines the efficiency of their enforcement by means of factory inspection and otherwise. The enforcement of state legislation for working-hours, proper water and milk supply, education of the children, sanitary tenement conditions, efficient health administration, is dependent upon the interest, activity, and intelligence of the public, of which the working class is a large and influential part.

The first and most important step in securing hygienic rights for workingmen is to make sure that they know the rights which the laws already give them. For example, the passage of the workingman's compensation law in 1913 marked a revolution in the treatment of industrial-accident cases in the state of Illinois.

Where previously the injured workman had been the prey of unscrupulous, ambulance-chasing attorneys, of unprincipled employers, and of heartless claim agents and casualty companies, today his legal status is definitely fixed and his compensation or his death benefit automatically provided for, and the field of activity of the lawyers, both reliable and dishonest, is reduced to the minimum. Mr. Samuel Harper, attorney for the Workingman's Compensation Committee, desires to give wide publicity to the fact that now no attorney need be retained by the injured workman, and also to the right which the workman has of appealing to the Industrial Board in case of dispute between the employer and the employee.

What the employee can do for himself as a citizen having equal health rights with employers he has never been taught to see. Perhaps the highest service which can be rendered to society by industrial hygiene is to educate the industrial classes to recognize unhygienic conditions, to co-operate with other citizens in eliminating them, and to secure the enforcement of health regulations. Where can this be done more effectively than in the schools?

FRANK M. LEAVITT
L. GRACE HUFF

UNIVERSITY OF CHICAGO

TESTING THE EFFICIENCY IN READING IN THE GRADES

E. E, OBERHOLTZER
Superintendent of City Schools, Tulsa, Oklahoma

The study discussed in this article was carried out in the Tulsa city schools after the teachers and principals had signified their willingness and anxiety to co-operate. The interest grew out of a series of grade meetings where the subject of reading in all its phases was discussed. As a result of this study the writer as well as all others concerned has received a new view of the subject and its possibilities. In the beginning the teachers were somewhat skeptical as to the purpose of the tests, some thinking that it was an attempt to check up the work of the individual teacher as a basis for determining his efficiency. However, as the work proceeded the purpose became evident, teachers and pupils alike entering upon it with a feeling that it was legitimate and profitable.

One must necessarily face many difficulties in such an undertaking. It was found necessary to change many minor details and to simplify directions. The value of the result of such a test depends largely on uniformity of selections and the similarity of conditions under which the tests were given. Such factors as the day of the week, whether Monday or Friday, the time of day, whether 9:00 A.M. or 3:30 P.M. were found to be significant. It was found desirable to have the study made as a part of the regular everyday work of the school and conducted by the regular classroom teacher in the presence of the principal. However, the principal must be a frequent observer in the classroom lest there be the feeling on the part of the pupils that something extraordinary is being undertaken. These factors, while they may seem minor in importance, are telling in the effect they have on the final results. Furthermore, the work should be carefully planned and discussed before the teaching body, so that the test may be given under "natural" conditions. Should there be evidence of coaching or an attempt of the individual teacher to "shine" in reporting

results, the result will be unsatisfactory. By the person who has attempted such a study the difficulties spoken of above are fully appreciated. It may be said, however, that most of the errors are compensating rather than cumulative and diminish as the tests are carried forward.

It seems quite evident from this study that the child in learning to read is facing a multitude of difficulties without being guided by a definite notion of how to proceed. Methods of presenting the subjects, habits formed in visualizing the printed page, the span of attention, mental alertness, sense perception, vocal impediment, and many other individual differences are significant factors for the teacher's study and significant to the child's success in acquiring the ability to read.

The notion that the way to learn to read is to *read, read, read,* may be responsible for the establishment of many wasteful and careless habits. Reading should be constantly under the supervision of the teacher, both in the study period and the recitation. Lessons should be given in silent as well as oral reading, and the emphasis should be placed where the greatest advantage will accrue to the learner in adapting himself to his social needs. These and many other vital phases suggest themselves from the study herein presented.

The tests were given near the close of school. One building was under the direct charge of the principal. In the other cases individual teachers gave the tests as directed by the circular letter sent out. Some irregularities entered into the test which, in a way, affected the results slightly. On the whole the tests have demonstrated certain facts and revealed certain characteristics of the work in reading which are worth while emphasizing to teachers of reading. In all about 1,800 pupils were tested, distributed as follows: first grade, 350; second grade, 350; third grade, 240; fourth grade, 174; fifth grade, 157; sixth grade, 130; seventh grade, 165; eighth grade, 91.

DIRECTIONS TO TEACHERS

Get ready for the first test by having the children get out (1) the books containing the passage to be read and (2) paper and pencil.

Have them open the book to the page *before* the one on which they are to read. Tell them they are to read the passage in such a way that they shall be able to report to you. Do not tell them that you are going to time them. At a signal tell them to turn over the page and all begin together to read the passage. After two minutes (if you have chosen a passage which will surely last longer than that; if the passage is short, take a less time) have the reading stop, have the books closed, and have the children write at once the last words that they read. Now, ask them, for the space of twelve or fifteen minutes, to write what they can recall of the passage.

Second, try an oral test with another passage as though it were a regular reading lesson. Put your watch where you can readily refer to it, but where it will not attract attention, and note the time required for each pupil's reading. The passages in this case will, of course, be of different lengths.

The silent reading and the oral reading tests should now be tabulated for the whole class. Count the words in all cases and divide the number of words by the number of seconds required for the reading.

Try these tests with the following kinds of passages: (1) a familiar passage read sometime ago; (2) a familiar passage read recently; (3) a new easy passage; (4) a new difficult passage.

Repeat each type of test, reporting the first trial under x and the second under y. That is, let $1x$ designate the first trial with a familiar passage read long ago, $1y$ the second trial of such a passage; $2x$ the first trial with a familiar passage read recently and $2y$ the second trial, etc. Allow two days to elapse between x and y.

Find the averages of these several averages, reporting as follows:

Let $5x$ stand for average of oral.
$5y$ stand for average of oral and silent.
$6x$ stand for average on first trial of silent.
$6y$ stand for average on second trial of silent.

Make two averages for each child, averaging together those results which come from the silent reading and those which come from the oral reading. Thus, if in silent reading the child reads

250 words in 120 seconds, the rate is 250 divided by 120 equals 2.08. If he reads orally 90 words in 50 seconds, the rate is 1.8. The averages required are simple arithmetical averages. In making a table of results follow the scheme given below:

Name of school.....Teacher.....Date.....

Name of Pupil.....	Oral 1x	Oral 1y	Oral 2x	Oral 2y	Oral 3x	Oral 3y	Oral 4x	Oral 4y	Average .....
	Average of Oral 5x		Average of Oral and Silent 5y						

Your principal will be given the selections chosen for each grade.

(Signed) E. E. OBERHOLTZER, *Superintendent*

The following is a sample of the results of the tests taken from average of grades:

TABLE I

RESULTS OF TESTS

	Fifth Grade		Seventh Grade		Eighth Grade	
	Number of Pupils	Average Words per Second	Number of Pupils	Average Words per Second	Number of Pupils	Average Words per Second
1x	157	2.5	165	2.6	91	3.4
1y	214	2.3	159	2.9	64	3.9
2x	238	2.7	151	3.0	93	4.1
2y	231	2.7	153	3.1	87	4.6
3x	197	2.6	153	3.0	87	4.6
3y	172	2.6	153	3.3	72	4.4
4x	137	2.8	86	2.4	75	3.3
4y	139	2.8	105	3.0	74	4.8
5x	86	2.4	80	3.1	56	3.9
5y	63	3.1	209	3.6	25	3.8
6x	166	3.1	105	4.7	175	4.2
6y	139	3.0	81	4.8	140	4.8

In most cases the second trial with the same selection showed decided improvement. In a few cases there was a misunderstanding of the instructions, the teacher merely continuing the reading at the place where the first trial ended.

Table II shows the average of oral reading in a series of eight tests for each of the grades from third to eighth.

The following are the conclusions:

1. The difference in the rate of reading between the oral and silent method increases as the pupil advances in the grades.

In the first grade the oral reading is earliest developed and the child naturally depends on this means of expressing himself and of getting the thought. The rate of silent reading is much slower where he is required to grasp closely the content. This is perhaps due largely to the absence of vocal accompaniment and the auditory sensations, etc., to which he is accustomed.

TABLE II

SHOWING INCREASE IN RATE IN THE THIRD TO EIGHTH GRADES

	Pupils	Average
Third grade	250	2.1
Fourth grade	174	2.3
Fifth grade	157	2.4
Sixth grade	130	2.8
Seventh grade	165	3.1
Eighth grade	91	3.9

2. There seems to be a definite correlation of the rate of reading among the grades, the rate of silent reading increasing most rapidly as the grade is advanced. This is perhaps due largely to the child's being thrown more on his own responsibility; also to the fact that he realizes more fully the value of silent reading in giving him control over the printed page and in acquiring information. He has also ceased to practice the oral reading and begins larger utilization of silent reading.

TABLE III

	Oral	Silent
Third grade	2.1	2.3
Fourth grade	2.3	2.6
Fifth grade	2.4	3.1
Sixth grade	2.8	3.9
Seventh grade	3.1	4.7
Eighth grade	3.9	4.8

Table III shows a difference of 1.8 between the rate of the third grade and that of the eighth in oral reading, whereas the difference between the rate in the third grade and that of the eighth in silent reading is 2.5 (see III), or more than double the rate for the third grade. Two hundred and forty pupils were

tested in the former and ninety-one in the latter. Thus it is seen that the rate in silent reading increases more rapidly than the rate in oral.

3. The rate of reading in all the grades is relatively lower than it should be if the habit of reading had from the beginning been acquired through conscious effort to improve the rate.

One room showed an increase of 50 per cent in the rate after two weeks' practice in rapid reading. These tests showed that oral expressions and the power to grasp the content were equally improved. Tests are now being carried on, both with the classes and individuals, in order to ascertain how far rate improvement may be carried and at the same time maintain a high standard in oral expression or grasp of content. Results of these tests we hope to report later.

4. Silent reading measured in terms of its usefulness to the individual has been sadly neglected.

Pupils must consciously strive to become efficient in silent reading, yet the teacher is the most potent factor in bringing about rate improvement. Much, of course, depends upon how well the child realizes the advantage an efficient reader has in the field of intellectual attainment or practical achievement.

5. The efficiency of reading, like writing, is very largely the result of the kinds of habits acquired in the early grades.

The child when he begins to read is prone to form many awkward and wasteful habits. Lip movement or any form of vocal accompaniment is a hindrance in rapid reading. Practice in enlarging the unit in the span of attention, as well as in forming accurate visual concepts, should be given early in the child's experience in learning to read. Word-study is not reading; in teaching reading the sentence is the unit. The sentence method seems to enable the child to read more rapidly. The kind of habits formed in reading will determine largely the efficiency of the reader.

6. Efficiency may be measured in silent reading in respect to the grasp of thought with as great a degree of accuracy as expression in oral reading

Experiments have shown that the rapid reader has more power and experience in grasping the content—in fact the rapid reader

seems to have greater power in this respect. By choosing a simple selection where a few definite thoughts are expressed, it is possible to measure accurately the efficiency of the grasp of content. This is a more simple process than measuring expression in oral reading.

7. Few children are good silent readers. The rate decreases in proportion to the strictness with which the pupils are held for the content.

Upon examination we were surprised at the very small number of good silent readers. The power to grasp content was also notably lacking. Thus the tests seem to reveal the need of more attention in teaching silent reading.

8. Teaching silent reading is a subject yet to be developed in our system, and one which will receive closer attention.

One of the most interesting things about the series of tests was the revelation to both teachers and pupils. An attitude of zeal and determination among the teachers was generally shown. In summarizing I shall say that the few statements quoted in the following are sufficient to show the attitude of the teaching body giving the tests.

REACTION OF TEACHERS

(*Quotations*)

1. We do not know how to teach silent reading.
2. We had not realized the importance of efficiency in silent reading as related to the rest of the subjects.
3. We are going to emphasize the silent reading and grasp of content.
4. We will not teach oral reading less, but silent reading more.
5. The problem is ours. We will assist in its solution.
6. We have new interest in teaching reading.

SELECTIONS FOR READING EFFICIENCY TESTS TO BE HELD TUESDAY AFTERNOON AND THURSDAY AFTERNOON

1B

I. "The First Lesson," Wheeler Primer, p. 38.
"Gyp, Muffet and Flozzy," Wheeler Primer, p. 121.
"Dolly's Bed," Wheeler Primer, p. 73.
II. "My Dove," Ward Primer, p. 47.
III. "The Duck," Ward Primer, p. 22.
"Out for a Walk," Ward Primer, pp. 27, 38.
IV. "Little Will," Ward Primer, p. 76.
"Three Little Kittens," p. 35.

1A

I. Wheeler First Reader, pp. 61, 62.
II. Wheeler First Reader, pp. 103, 35.
III. Free and Treadwell Primer, pp. 89, 32, 38, 30.
IV. "Ugly Duckling," "Three Pigs," Household Stories.

2B

I. Wheeler First Reader, pp. 25, 32–33, 44–45.
II. Wheeler Second Reader, pp. 9–12, 31–33, 67–69.
III. Free and Treadwell Second Reader (or similar selection), pp. 11–12, 13–19.
IV. Free and Treadwell Second Reader (or similar selection) pp. 88–96, 105–22.

2A

I. Wheeler Second Reader: "Rainbow Fairies," pp. 49–53; "Miss Pussy Willow," pp. 70–72; "H. W. Longfellow," pp. 43–44; "Ceres and Persephone," pp. 19–23.
II. Wheeler Second Reader: "Shoemaker and Elves, pp. 138–41; "Lucky Loaf," pp. 142–45.
III. Free and Treadwell Second Reader: "Hans in Luck," pp. 58–66; "The Queen Bee," pp. 75–80; "Discontented Pine," pp. 35–37.
IV. Grade Literature Book, III, "Story of Columbus," pp. 22–29; "Hans the Shepherd Boy," pp. 30–34; "Benjy in Beastland," pp. 39–48.

3B

Silent Test

I. Wheeler Third Reader, p. 145.
II. Wheeler Third Reader, p. 184.
III. Heath Third Reader, p. 143.
IV. Heath Third Reader, p. 226.

Oral Test

I. Wheeler Third Reader, p. 83.
II. Wheeler Third Reader, p. 222.
III. Heath Third Reader, p. 12.
IV. Heath Third Reader, p. 210.

3A

Silent Test

I. Wheeler Third Reader, p. 104.
II. Rational Method in Reading, p. 98.
III. Heath Third Reader, p. 205.
IV. Stories of American Life and Adventure, p. 26.

Oral Test

I. Wheeler Third Reader, p. 164.
II. Rational Method in Reading, p. 127.
III. Heath Third Reader, p. 210.
IV. Stories of American Life and Adventure, p. 9.

4B

I. "To Be a Gentleman," Heath Reader, p. 318.
II. "The Village Blacksmith," p. 102.
III. "The Forest Fire," p. 126.
IV. "The Little Brown Baby," Seven Little Sisters, p. 5.
V. "The Georgia Volunteer," Johnson Fourth Reader, p. 243.

4A

I. Graded Classics, p. 62.
II. Graded Classics, p. 45.
III. How the World Is Fed, p. 46, beginning with "Our corn crop," etc.
IV. How the World Is Fed, p. 73.

5B

Silent Test

I. Heath Fifth Reader, p. 80.
II. Heath Fifth Reader, p. 324.
III. How the World Is Fed, p. 7.
IV. How the World Is Fed, p. 274.

Oral Test

I. Heath Fifth Reader, p. 170.
II. Heath Fifth Reader, p. 316.
III. How the World Is Fed, p. 56.
IV. How the World Is Fed, p. 308.

5A

Silent Test

I. Johnson Fifth Reader, p. 7.
II. Johnson Fifth Reader, p. 236.
III. Thomas Elementary History, p. 299.
IV. Johnson Fifth Reader, p. 315.

Oral Test

I. Johnson Fifth Reader, p. 10.
II. Johnson Fifth Reader, p. 239.
III. How the World Is Fed, p. 214.
IV. How the World Is Fed, p. 317.

6TH GRADE

I. Story of Europe: "Sparta and Athens," p. 15; "Successes of Columbus," p. 278; "Growth of Civilization," p. 349.
II. Story of the English: "King and Parliament, p. 260.

7B

I. Story of the English: "The Field of Cloth of Gold," p. 207.
II. "Courtship of Miles Standish," Curry's Reader, p. 63.
III. How the World Is Fed, p. 163.
IV. Curry's Reader, p. 49.

7A

I. Curry's Reader, p. 143, line 131.
II. "Vision of Sir Launfal," Curry's Reader, p. 217.
III. The Advanced History, p. 250.
IV. Curry Literary Reader, p. 374.

8TH GRADE

I. Familiar passage read some time ago: "Great Stone Face," Curry Reader.
II. Familiar passage read recently: "Enoch Arden," Curry Reader.
III. New easy passage: "How England Is Governed," Carpenter's Europe, p. 76.
IV. New Standard Encyclopedia, Vol. III (Chicago), for a new difficult passage.

AN INQUIRY INTO THE DEPARTMENTAL SYSTEM

JAMES H. HARRIS
Superintendent of Schools, Dubuque, Iowa

In connection with a study of the Six-and-Six plan and the reorganization of the upper grammar grades, it occurred to me that it might be of interest to ascertain the attitude of the pupils of the seventh and eighth grades toward the departmental system which has been in operation in these grades for about three years.

I accordingly prepared a brief questionnaire, which was distributed to all the pupils of the seventh and eighth grades in our public schools. The questionnaire was as follows:

AN INQUIRY AS TO THE DEPARTMENTAL SYSTEM

Name.....School.....Grade .....
Date.....

Which do you like better, one teacher for all subjects, as you formerly had it, or different teachers for different subjects, as you have it now?

State, in a sentence or two, the reason for the answer you give.

The pupils were given the utmost freedom as to the nature and form of their reply, and no suggestion was offered that could in any way influence them in their expression of a preference. The replies may therefore be fairly interpreted to represent the untrammeled and candid sentiments of those who gave them, and, within the modest bounds set by the questionnaire, the results may be accepted as trustworthy.

The answers of the pupils disclose the fact that more than 80 per cent prefer the departmental to the one-teacher system. In other words, the majority for the departmental system is as four to one, with a little to spare. The exact figures are as follows:

Total number responding to inquiry	462
" " favoring different teachers for different subjects	382
Total number favoring one-teacher system	80
Percentage " departmental "	.82+

VOTE BY GIRLS AND BOYS

The girls show a larger percentage in favor of the departmental system than do the boys. In this respect the replies give the following results:

Total number of boys responding to inquiry						222
" " " "	favoring departmental system					170
" " " "	"	one-teacher	"			52
Percentage " " "	"	departmental	"			.76+
Total number of girls responding to inquiry						240
" " " "	favoring departmental system					212
" " " "	"	one-teacher	"			28
Percentage " " "	"	departmental	"			.88+

PREFERENCE BY GRADES

In studying the preferences by grades we find that the eighth grade is somewhat more strongly inclined toward the departmental system than the seventh grade. This is as it should be, assuming that the system is an improvement on the one-teacher-for-a-grade system. If the eighth grade showed a diminishing percentage favorable to the system, it would be an indication that it was not standing the test of time.

The statistics yield the following results:

Total number of eighth-grade pupils responding to inquiry				229
" "	favoring departmental system			198
Percentage	"	"	"	.86
Total number of seventh-grade pupils responding to inquiry				233
" "	favoring departmental system			184
Percentage	"	"	"	.79 (nearly)

There is thus apparent an advance of 7 per cent in the showing favorable to the departmental system.

BY HALF-GRADES

Studying the figures by half-grades, we find that the A7, B8, and A8, are approximately the same, the percentages being respectively: 87, 86, and 87. There is a slightly lower percentage in the B8 than in the A7, but it is not enough to be significant. The percentage for the B7, however, is only 69; from which point it jumps to 87 in the B8. It is evident that many pupils have not

become adjusted to the new methods in B7, where the departmental system is first put into operation, and as a result the number of those favoring it is considerably smaller. It is evident, too, that as soon as they become adjusted to it they show no diminution in fidelity. The figures bearing out the above percentages are as follows:

Total number of A8 pupils answering inquiry..... 108
" " favoring departmental system..... 94
Percentage A8 " " " ..... .87

Total number B8 pupils answering inquiry..... 121
" " favoring departmental system..... 104
Percentage B8 " " " ..... .86

Total number of A7 pupils answering inquiry..... 124
" " favoring departmental system..... 108
Percentage A7 " " " ..... .87

Total number of B7 pupils answering inquiry..... 109
" " favoring departmental system..... 76
Percentage B7 " " " ..... .69

THE GRADES BY BOYS AND GIRLS

When we study the grade replies by boys and girls, we find the results given in Table I.

TABLE I

	No. Replies	No. Favoring Departmental System	Percentage Favoring Departmental System
Eighth-grade boys.....	106	86	.81
" " girls.....	123	112	.91
Seventh-grade boys.....	116	84	.72
" " girls.....	117	100	.85
BY HALF GRADES			
A8 boys.....	52	43	.82
B8 "	54	43	.79
A7 "	63	53	.84
B7 "	53	31	.58
A8 girls.....	56	51	.91
B8 "	67	61	.91
A7 "	61	55	.90
B7 "	56	45	.81

Taken by solid grades, we see that the boys advance from 72 per cent who favor the departmental system in the seventh grade, to 81 per cent who favor it in the eighth. The girls advance from 85 per cent to 91 per cent.

When we study the progress by half-grades, we observe that the boys do not take to the new system, or do not adjust themselves to it, so readily as the girls. In the course of the four terms, however, they show a more rapid transformation of opinion than do the girls. They become "converted" very rapidly, after they have once made the adjustment. The girls adjust themselves more quickly and in larger numbers in the B7 grade and practically "strike their gait" in the A7.

REASONS FOR PREFERENCE

The second topic in the questionnaire: "State the reason for the answer you give," elicited many interesting replies.

Table II classifies the reasons as closely as it was possible to group them.

TABLE II

REASONS FAVORING DEPARTMENTAL SYSTEM

	Improved Teaching through Specialization	Change and Variety	Prepares for High School	Easier for Teachers	Seems to Shorten Time	Custom	Gives Change to Teachers	Getting Along Better through Having *Several Teachers*	More Interesting	Miscellaneous	Total
Boys . . .	131	31	7	10	2	2	0	2	0	4	189
Girls . . .	138	69	7	10	0	7	5	3	3	7	249
Total.	269	100	14	20	2	9	5	5	3	11	438

REASONS FAVORING ONE-TEACHER SYSTEM

	Dislikes Confusion of Changing from Room to Room	Gains Time	Easier to Get Used to One Teacher	Knows Standing in Other Subjects	Better Teaching	Knows Pupils Better	Accustomed to Old Way	More Interesting for Teacher	Miscellaneous	Total
Boys	12	15	14	1	4	3	1	0	5	55
Girls	4	3	11	2	3	4	0	1	2	30
Total. . .	16	18	25	3	7	7	1	1	7	85

As will be seen, 269 of the 438 reasons assigned for preferring the departmental system had reference to improved teaching through specialization. "We learn more," said several, "because the teacher can teach two or three subjects better than eight or nine." "I like different teachers for different subjects," said one boy (and he was representative of many others), "because they know their subjects better and can teach them better." This view of the value of the departmental system bears out strongly, from the pupils' point of view, the a priori and theoretical argument advanced by those schoolmen who favored its introduction. The experience and testimony of the children themselves confirm the view that the departmental system means a measure of specialization with resultant better teaching.

The variety, change, and increased interest that come from having several teachers instead of one is the reason that appeals to 100 of those who favor the departmental system. This reason is expressed in various ways, but it usually falls back upon two forms: either they feel relief from the monotony of one teacher all the time, or they assert their liking and preference for several teachers as over against one, because it gives variety and affords change. It is not unlikely that the three who assert that it is "more interesting" to have several teachers than only one, and the two who say that it seems to "shorten the day," have the thought of variety in mind, but there was not enough certainty to justify classification under that head. The same thing is possibly true with regard to the five who prefer the departmental system because they can "get along better with several teachers than with one." On the other hand, this last-named reason may refer to "getting along" in studies and may properly be classified under "improved teaching." However, they have been listed as separate reasons in lieu of any positive means of identification.

That the departmental system means more effective teaching and gives greater variety and interest to school life is amply sustained by the responses of the pupils. Sixty-one per cent assign "improved teaching" as the reason for their preference and 22 per cent assign "variety and change." Grouping them, we find that these two reasons include 83 per cent of the replies.

It was noticeable that only 14 of the 438 assigned as the reason for their preference the better introduction to the high school afforded by the departmental system. In theoretical arguments for the departmental system this point is prominently stressed—and rightly so—but with the pupils themselves it involved an anticipation of experience which naturally did not occur to many of them.

Twenty are of a distinctly altruistic type and prefer the departmental system, not because it is of advantage to themselves, but because it is "easier for the teacher"! May their consideration for their teachers never falter! Five others have the teacher's comfort in mind when they give as their reason, "it gives change and variety to the teacher." These twenty-five have at least kindly hearts!

REASONS FOR PREFERRING ONE-TEACHER SYSTEM

Of the 85 reasons given for preferring the one-teacher system, 25 (29 per cent) named the fact that is was easier to get used to one teacher than to several. There is, of course, something to be said for this point—at least from the side of the pupil. Again, 18 were of the opinion that the one-teacher system was preferable because it saved time. Time is lost, according to them, in the movement of classes from one room to another. This parsimonious attitude toward time, in the light of the reckless way in which most young people of that age squander it, is a curious phenomenon. Allied closely with the time loss involved in moving from room to room, is the point made by 16 pupils that it also caused confusion and disturbance, and for that reason the one-teacher system was to be preferred.

Seven thought better teaching resulted from the one-teacher system—just the reverse of the argument offered by 61 per cent of those who favored the departmental system. Another group of 7 preferred the one-teacher system because it enabled the teacher to know her pupils better. There is doubtless an element of legitimacy in this reason.

The group of 85 who favored the one-teacher system were evidently not interested in the teacher's comfort or happiness, for

only one considered the question from her point of view, and his only comment was that he thought the one-teacher system was "more interesting for the teacher."

The remaining ten reasons were of a heterogeneous nature and no classification of them was possible.

Many of the replies had an element of originality and humor in them, and a few of the choice ones are here reproduced. In expressing her preference for the departmental system, one girl said, "I would rather have three teachers than one because when you get into business you may have more than one 'boss' and you will be used to it because you had more than one teacher, and a person can learn more with different teachers because you get tired of seeing the same teacher every day and all day that you don't feel like studying."

A boy who felt that the departmental system involved a loss of time expressed himself as follows: "I prefer one teacher for all subjects, because in passing from one room to another we lose time and have to rush to make up this at the end of the term."

Another boy in giving his reasons for preferring different teachers for different subjects, said, "My reason is that it is nicer to hear different teachers' voices during school time."

"I like different teachers for different subjects," said still another boy, "because it makes the day shorter"—certainly a desirable result if it can be achieved!

Here is a young lady who got into deep water in her reply, but managed to drag herself out in the last sentence. "My reason is," she says, "for liking different teachers for different subjects, that I think I can learn better, and that they are more strict than the teacher I always have, and I like this better. Not saying the teacher I always have is not strict."

The girl next quoted expresses her reason in both a positive and a negative manner. "The reason I would like different teachers," she says, "is because we might learn more, or if we had one teacher why maybe we might not learn as much."

Here is a boy who has a curious notion of what one teacher is doing when a class is reciting to another. "I like different teachers for different subjects," he says, "because it gives our teacher time to mark papers while we are in the other rooms."

Next comes a boy who likes music, for he says, "I like different teachers for different subjects because in Miss M.'s room she has a piano, and for history it don't make much difference."

That the departmental system makes for variety and interest is expressed rather forcibly in several instances. One girl says, "It is kind of dreary having one teacher all day." Another one says, "It gets me tired to have one teacher all day." "We get tired," says another, "of being under the same control all day."

Here's a boy who evidently thinks the teacher who teaches all subjects is in a sadly distracted state. "I like different teachers," he says, "because one teacher doesn't know which study we need the most."

CONCLUSION

In conclusion it may be said that the advantages theoretically assumed by schoolmen for the departmental system have been abundantly confirmed by the evidence and experience of the pupils themselves. When 382 out of 462 young people, who are actually working and living under this system, indicate their preference for it, it may be accepted as at least collateral evidence that the system is successful; that it is meeting the situation it was designed to meet, and that it appeals to the intelligence and interest of the boy and girl of the upper grammar-school period.

The writer makes no claim that the data of this article are conclusive. The results of the inquiry are interesting and significant; they show how the children themselves feel about the system; they shed a little side light on the subject. That is all that is claimed for the inquiry.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, University of Chicago

Barber, Fred D. The present status and meaning of general science. School R. 23:9–24. (Ja. '15.)

Bean, Robert Bennett. The eruption of the teeth as a physiological standard for testing development. Pedagog. Sem. 21:596–614. (D. '14.)

Bohn, William E. First steps in verbal expression. Pedagog. Sem. 21:578–95. (D. '14.)

Chapin, Henry Dwight. What animal experimentation has done for children. Pop. Sci. Mo. 86:55–62. (Ja. '15.)

Cooper, Lane. The teaching of English and the study of the classics. Educa. R. 49:37–47. (Ja. '15.)

Coulter, John M. The mission of science in education. School R. 23:1–8. (Ja. '15.)

Coursault, Jesse H. Standardizing the junior college. Educa. R. 49:56–62. (Ja. '15.)

Cutten George B. Moral influence of the curriculum. Relig. Educa. 9:520–27. (D. '14.)

Dodd, Alvin E., and Bawden, William T. Report on a plan for an elementary industrial school in the city of Richmond, Virginia. Man. Train. M. 16:271–77. (Ja. '15.)

Eckels, George H. The place of mathematics in the high school curriculum. Am. School Bd. J. 49:21, 58–59. (D. '14.)

Engleman, J. O. A survey of entrance requirements and recent tendencies in the courses of study of the normal schools of the United States. Pedagog. Sem. 21:532–58. (D. '14.)

Fitzpatrick, Frank A. The development of the course of study in American schools. Educa. R. 49:1–19. (Ja. '15.)

Hasty, Philip S. The present status of vocational work in the elementary school. II. Man. Train. M. 16:208–13. (D. '14.)

[1] *Abbreviations.*—Am. School Bd. J., American School Board Journal; Educa. R., Educational Review; J. of Educa. Psychol., Journal of Educational Psychology; Man. Train. M., Manual Training Magazine; Pedagog. Sem., Pedagogical Seminary; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinic, Psychological Clinic; Relig. Educa., Religious Education; R. of Rs., Review of Reviews; School R., School Review.

Jenks, Jeremiah W. University influence on civic life. Relig. Educa. 9:515–19. (D. '14.)

Judd, Charles Hubbard. The junior high school. School R. 23:25–33. (Ja. '15.)

Kayfetz, Isidore. A critical study of the Hillegas composition scale. Pedagog. Sem. 21:559–77. (D. '14.)

Kelley, Truman Lee. Comparable measures. J. of Educa. Psychol. 5:589–95 (D. '14.)

Kitson, H. D. Suggestions toward a tenable theory of vocational guidance. Man. Train. M. 16:265–70. (Ja. '15.)

Lanier, Henry Wysham. The educational future of the moving picture. R. of Rs. 50:725–29. (D. '14.)

Latham, Harris L. A study of falsehood. Pedagog. Sem. 21:504–22. (D. '14.)

Lewitin, Marie. The first Russian teachers' congress. Pedagog. Sem. 21: 615–18. (D. '14.)

Lull, Herbert G. The relation of vocational to academic instruction. Man. Train. M. 16:201–7. (D. '14.)

Otis, Margaret. A study in the borderland of morality. Psychol. Clinic 8:201–7. (D. '14.)

Peterson, Harvey A. The generalizing ability of children. J. of Educa. Psychol. 5:561–70. (D. '14.)

Phillips, Byron A. The Binet tests applied to colored children. Psychol. Clinic 8:190–96. (D. '14.)

Pintner, Rudolph. One hundred juvenile delinquents tested by the Binet scale. Pedagog. Sem. 21:523–31. (D. '14.)

Pintner, Rudolf, and Patterson, Donald G. Experience and the Binet-Simon tests. Psychol. Clinic 8:197–200. (D. '14.)

Reuben, Milton Harold. An undergraduate's view of college education. Educa. R. 49:48–55. (Ja. '15.)

Rice, Melvin. The practical operation of school lunchrooms. Am. School Bd. J. 49:17–18. (D. '14.)

Russell, William F. Economy of time in secondary education. Educa. R. 49:20–36. (Ja.' 15.)

Scott, Fred Newton. Efficiency for efficiency's sake. School R. 23:34–42. (Ja. '15.)

Thorndike, Edward L. Measurement of ability to solve arithmetical problems. Pedagog. Sem. 21:495–503. (D. '14.)

Thorndike, Edward L. The significance of the Binet mental ages. Psychol. Clinic 8:185–89. (D. '14.)

Witham, Ernest C. School measurement. J. of Educa. Psychol. 5:571–88. (D. '14.)

WANTED

IDEAS AND PLOTS FOR PHOTOPLAYS

YOU can write them. We teach you. Previous literary experience unnecessary. Manufacturers want **your** ideas and pay from $25 to $100 for each play accepted. Many contests for amateurs offer chance to win as high as $10,000. Demand increasing, details free.

Associated Motion Picture Schools
600 Sheridan Road - - CHICAGO, ILL.

CORNELL UNIVERSITY

Summer Session July 6–August 13

Instruction for teachers in all high-school subjects, including Oral English and Spanish. Music, Manual Training, Nature Study, and Gardening, for high school and grades. Many courses in Physics, Chemistry, and the Biologic Sciences, including their applications in Agriculture and Home Economics. Cornell affords a very unusual combination of university equipment and rare opportunities for out-of-door work in garden and field, forest and stream.

For announcement write
Registrar of the University, Ithaca, N.Y.

The University of Montana Summer School

Missoula, Montana ***In the Heart of the Rockies***

Intellectual Inspiration and Physical Comfort

THE location of the University of Montana is in the midst of the finest mountain scenery in the world. The climate is ideal and the work of the summer student is a delight in these surroundings.

Eminent specialists are on the teaching staff and the entire equipment of the University of Montana is available.

COURSES

The summer school is intended for teachers who wish to improve their professional equipment, to do residence work for credits toward degrees, to increase their knowledge, and to renew their enthusiasm.

Teachers, principals, and superintendents will find special courses suited to their needs.

Unparalleled opportunity for work in biology is afforded at the Montana Biological Station on Flathead Lake.

For details, address

DIRECTOR OF SUMMER SCHOOL
UNIVERSITY OF MONTANA
Missoula, Montana

EVER NEED DUPLICATES

Of Form Letters, Price Lists, Bills, Invoices, Drawings, Menus, Reports, ANYTHING? Then take advantage of our offer of

10 DAYS' TRIAL, WITHOUT DEPOSIT

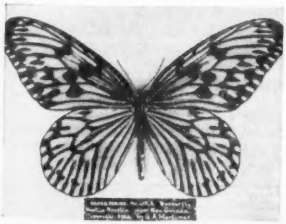
and become one of thousands of satisfied customers who all agree that **Daus' Improved Tip Top Duplicator** is the simplest, easiest, and quickest method of duplicating on the market. **100 copies** from Pen-written and **50 copies** from Typewritten Original.

Each machine contains a continuous roll of our new **"Dausco" Oiled Parchment Back** duplicating surface which can be used over and over again. If you have tried other duplicators without success, you will be more than pleased with ours.

Complete Duplicator, Cap Size (prints 8¾x13 inches). Price $7.50. Less special discount of 33⅓% Net **$5.00**

FELIX E. DAUS DUPLICATOR CO., Daus Bldg., 111 John St., NEW YORK

TEACHERS AND STUDENTS OF DRAWING



Everywhere Should Use

Mortimer's Silver Series

of reproductions of Original Direct Photographs of Natural Objects and Art Ornament—Designs, Leaves, Sprays, Flowers, Fruits, Animal Life, etc., for Drawing Copies. Prints about 4×6 inches on sheets 7×9.

Assorted Sets of Eight Copies at 25c net, each set. Over 40 Sets, consisting of over 300 different copies, in the Series. Send postcard for list of subjects. Order through dealers, or direct from

GEORGE A. MORTIMER - - - Pasadena, California

The Minister and the Boy

By Allan Hoben, *Associate Professor of Homiletics in the Divinity School of the University of Chicago*

Illustrated, 180 pages, 12mo, cloth; price $1.00 postage extra (weight 1 lb. 4 oz.)

FROM the first chapter on "The Call of Boyhood," through one on "The Approach to Boyhood," the author leads us by suggestion and informing principle to realize the remarkable opportunity afforded by the raw material "boy," on which the minister may work. Later chapters on play and vocational choice show how to train the boy for citizenship, how responsive he is to the right sort of impetus, and how his religious life may indirectly, and even unconsciously, be stimulated by the proper appeal to his manly instincts, while furnishing him with a normal outlet for his natural enthusiasm. And all this is of extreme value, since nothing is offered as a theory only. The book is practical throughout and each chapter is filled with concrete suggestions which are vitalized by the author's actual experience.

Problems of Boyhood

By Franklin W. Johnson
Principal of the University of Chicago High School

12mo, cloth; price $1.00, postage extra (weight 1 lb.)

SUCH topics as Keeping Clean, Habits, Gambling, Betting, Clean Speech, Right Thinking, Sex, Loyalty, Self-Control, and other themes of equal importance are discussed informally and in such a way as to arouse the keenest interest on the part of boys. This long-needed book will be useful in Sunday-school, day-school, and Association classes. It is the first book in the field to start with a recognition of the boy's point of view.

The University of Chicago Press
Chicago - - - - Illinois

Questions on Shakespeare

By ALBERT H. TOLMAN

In Pamphlet Form

The following have been prepared: A Midsummer Night's Dream, I Henry IV, II Henry IV, The Merchant of Venice, Much Ado about Nothing, As You Like It, Twelfth Night, The Tempest.

Convenient pocket size

Price, each, 17 cents postpaid

The University of Chicago Press
Chicago Illinois

The Elements of Debating

By LEVERETT S. LYON

¶ A high-school manual, giving detailed instruction in the art of debating. The planning and composition of an argument are discussed at length, and noteworthy examples are quoted and analyzed. A bibliography leads the way to a wider study of the subject, and a list of suggested topics will prove useful in the arranging of debates.

x+136 pages, 12mo, cloth; price $1.00, postage extra (weight 14 oz.)

THE UNIVERSITY OF CHICAGO PRESS
Chicago :: :: Illinois

CONTRIBUTIONS TO EDUCATION

By JOHN DEWEY and ELLA FLAGG YOUNG

IN this series a union is effected between educational theories and actual practice. The fundamental principles of modern psychology are strictly applied to the educational situation, and there is a gratifying absence of vague and abstract theorizing.

I. **Isolation in the School.** By ELLA FLAGG YOUNG. 112 pp., 12mo, paper; net, 50 cents; postpaid, 54 cents.
II. **Psychology and Social Practice.** By JOHN DEWEY. 42 pp., 12mo, paper; net, 25 cents; postpaid, 27 cents.
III. **The Educational Situation.** By JOHN DEWEY. 104 pp., 12mo, paper; net, 50 cents; postpaid, 53 cents.
IV. **Ethics in the School.** By ELLA FLAGG YOUNG. 44 pp., 12mo, paper; net, 25 cents; postpaid, 27 cents.
V. **The Child and the Curriculum.** By JOHN DEWEY. 40 pp., 12mo, paper; net, 25 cents; postpaid, 27 cents.
VI. **Some Types of Modern Educational Theory.** By ELLA FLAGG YOUNG. 70 pp., 12mo, paper; net, 25 cents; postpaid, 28 cents.

The Series, in Paper, Six Numbers; net, $1.50; postpaid, $1.63

The University of Chicago Press
CHICAGO - - - - ILLINOIS

TEXTBOOKS for the graded Sunday school, for religious education in schools and colleges, and for individual study of the Bible are published by the University of Chicago Press. They comprise 37 volumes, providing material for every grade of students, from the kindergarten to the college. Put yourself in touch with the editors, authors, and publishers of this series and obtain the advice of experts in grading your Sunday school, or in selecting textbooks for day school, study circle, or home use.

Send for Bulletin of Publications in Religious Education, Ethics and Theology, The Literature of the Bible, and Social Service.

The University of Chicago Press
Chicago - - Illinois

The Arithmetic of Everyday Life

EVERYDAY ARITHMETIC

(Now Ready)

By **FRANKLIN S. HOYT**, Formerly Assistant Superintendent of Schools, Indianapolis, *and*
HARRIET E. PEET, Instructor in Methods of Teaching Arithmetic, State Normal School, Salem, Mass.

Three-Book Course

BOOK ONE. For Grades II, III, and IV - - - 40 cents, postpaid
Problems grouped around pupils' home and school interests.

BOOK TWO. For Grades V and VI - - - - - 40 cents, postpaid
Contains new but thoroughly tested treatment of fractions, decimals, and percentage, which will both lighten the burden of teacher and pupils and give a sure mastery of these essential processes.

BOOK THREE. For Grades VII and VIII - - - 45 cents, postpaid
Emphasis placed on the application of essential processes to studies of business, industry, and civic affairs.

Teachers' Manual, with answers, supplied to all teachers using the books.

HOUGHTON MIFFLIN COMPANY

BOSTON **NEW YORK** **CHICAGO**

The Place of Industries in Elementary Education

By **Katharine Elizabeth Dopp**

IN this work the point of departure and the treatment are quite different from those which usually characterize educational books. The author has seized upon the instincts and racial characteristics of the Aryan peoples, and with these as a basis she has built up a progressive curriculum in which the industries occupy a place corresponding to that which anthropologists have given them in the development of the race. That the position is sound and the conclusions valid seems to be borne out by the successful use of the book in many normal-school and other teachers' classes, and the universal satisfaction of instructors and pupils in schools where the instruction has been arranged along the lines here laid down.

viii+270 pp., 12mo, cloth; $1.00, postage extra (weight 1 lb. 6 oz.)

The University of Chicago Press
Chicago - - - - - Illinois

Literature in the Elementary School

By
Porter Lander MacClintock

THE fundamental ideas underlying this book are that literature for children should be chosen for its excellence as literature and for its fitness for the children concerned; and that it should be taught as art, and the results produced should be literary and artistic results. To the end that these ideas may be made clear and practical, available in the final details of the teacher's choice and procedure, the book gives a series of detailed studies on the choice and teaching of the various kinds of stories; on poetry; on the drama; on myth as literature; on the correlation of literature with the other disciplines; on the actual teaching of the class in literature; on the return to be asked from the children; a chapter on out-of-school reading for children; and finally a list of titles in literature for each of the elementary grades, offered as a suggestion to the inventive teacher, but also defended as a working program tested by experience.

x+306 pages, 12mo, cloth; $1.00, postage extra (weight 1 lb. 8 oz.)

The University of Chicago Press
Chicago - - - - - Illinois